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ABSTRACT

For the purposes of this digest, productivity is defined as ways in which library and information services can assist agencies, industries, and individuals in producing goods and services effectively and profitably. Two fundamental issues that affect productivity are access and control; two major strategies for improving productivity are cooperation and education. Expanding information services can foster innovation and development among their users--government agencies, industries, libraries, and information centers that disseminate information to a broader spectrum--which can play a vital role in aiding productivity. Yet, these same entities that provide access to information must, at times, limit access to information. The issue of control extends to U.S. policy makers, who must decide whether the release of certain technical and scientific information developed by the United States would undercut U.S. competition globally or threaten national security. The protection of intellectual property rights is yet another issue of control. It seems that information providers must distinguish between what information falls into the realm of the private (classified information) and public (unclassified) domains. The concept of the "virtual library"--whereby the world's knowledge is accessible to anyone sitting at a desktop workstation--is becoming closer to a reality through recently proposed federal legislation, which would, if passed, establish a network to link government, industry, business, and university resources. However, the establishment of such networks will be inappropriate if educators fail to foster the development of information skills in students. (12 references) (MAB)

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LIBRARY AND INFORMATION SERVICES FOR PRODUCTIVITY

by

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Library and Information Services for Productivity

By Linda Schamber

Productivity, literacy, and democracy are the three themes chosen for the 1991 *White House Conference on Library and Information Services*. This digest focuses on productivity, which can be defined as ways in which library and information services can assist agencies, industries, and individuals in producing goods and services effectively and profitably. It will present a brief overview of just two fundamental issues, access and control, that affect productivity; and two major strategies, cooperation and education, for improving productivity.

Need for Change

Clearly the United States faces serious obstacles to productivity as a result of rapid social, economic, and technological changes over the past decade. Information has come to be seen as a vital component of strategies to solve these problems. The challenges range from improving the ability of the United States to compete in a shifting global market to overcoming illiteracy in order to enable Americans to cope with social and technological change. These challenges affect productivity at all levels, and they involve complex relationships among public-sector and private-sector agencies and institutions.

As the world economy moves toward a greater reliance on information and information technology, it becomes increasingly important for library and information professionals to participate in the development of policies that maximize productivity and minimize unemployment.

Access to Information

A major issue involves the responsibility of government and industry to provide access to scientific and technical information that can aid innovation and development. Government agencies in particular, by actively disseminating federal and state information and by mediating the exchange of private-sector information, can play a vital role in fostering competitiveness. Public and private libraries and information centers at all levels can contribute by expanding their databases and services to offer current economic and employment information.

The task of expanding information services for productivity is, of course, formidable. As always, the extent of user demand must be weighed against the costs of expanded services in terms of time and money. In addition, scientific, technical, and economic information varies greatly in its availability: there is no uniform standard or centralization for its collection, distribution, and dissemination, nor is the public often even aware of its availability. Finally, the information itself tends to be quickly outdated and complex in language and format. The American Library Association (1990a), Hernon (1989), and Ryland (1990) describe these and other challenges related to access.

Control of Information

While government and industry can boost productivity by providing access to information, they must also be concerned with limiting that access. Federal policymakers in particular must balance national interests against global interests in trying to prevent other nations from using scientific and technical information developed by the United States. In their view, the release of certain strategic data would compromise U.S. competitiveness and threaten national security.

Yet the need for control is in direct conflict with the view that the flow of federal information should be unrestricted to ensure that U.S. industry can compete. The private sector, in its rush to develop and market new technologies, places an increasing demand on the federal government for technical information. Further, some groups feel not only that the government must allow its constituents their constitutional right to access, but also that it has a responsibility to provide them with consumer information, products, and services. If the government relies instead on the market to determine whether a product or service should be offered, many citizens will be unable to obtain the information elsewhere. Yet still another conflict arises when the government is able to compete unfairly with the private sector by undercutting prices on products and services--including information products and services--that they both provide.

The issue of control also extends to the protection of privacy and intellectual property rights. Now, with the widespread availability of technologies such as computer networks, satellite transmissions, photocopiers, and audio recorders, it is relatively easy to invade privacy and to copy technical innovations and creative works. Heated debates revolve around moral, ethical, and legal questions about limiting access to information of a personal or creative nature when this information could also improve competition and profit among many industries.

Thus information providers at all levels in both the public and private sectors must determine what information is controlled, who controls it, and how to control it. Their policies must distinguish between protected (private, classified, proprietary) information and released (public, unclassified, nonproprietary) information, and they must cope with a controversial gray area between the two. The policies must establish safety nets that allow levels of access by the general public and special groups to different kinds of information. The federal government, for instance, has established a minimum level of citizen access with the Freedom of Information Act and its various information service agencies, and protective controls with the Privacy Act and copyright and laws. The American Library Association (1990a), Bearman (1984), Hernon (1989), and Hill

(1989) provide further discussions of information policymaking.

Cooperation Among Information Producers and Users

One strategy for improving productivity has been to encourage information transfer and intellectual collaboration among government, industry and academic institutions. In recent years, the federal government has made more federal information resources available to industry and has lowered antitrust barriers to the exchange of information among industries. The traditional industry model of self-sufficiency, where each firm conducts its own research in its own labs, is gradually being replaced by a model of strategic alliances among industries that alleviates some of this costly duplication of effort (Hill, 1989).

Ideally, say some experts, there should be a national policy that encourages the pooling of information from all institutions, government and nongovernment, so citizens can have access regardless of the source (Hernon, 1989). In library and information science, this concept has been referred to as a *virtual library*: a utopian concept wherein all the world's knowledge is available to anyone sitting at a desktop workstation. A recent example of progress toward this ideal was the introduction in Congress of the High Performance Computing Act of 1990, which would establish the National Research and Education Network to link resources of government, industry, business, and universities. Inspired by this legislation, three organizations--the Association for Research Libraries, CAUSE, and EDUCOM--joined in March, 1990 to form the Coalition for Networked Information designed to enrich scholarship and enhance intellectual productivity (Ryland, 1990).

There is a long tradition of sharing information resources among libraries and educational institutions, but cooperation among these institutions and government and industry has been slower to develop. At local and regional levels, more cooperative projects are needed in order to strengthen competitiveness among existing firms and attract new firms to regions. Local libraries, for example, can work directly with local businesses by providing access to data such as corporate profiles and stock quotations, and services such as business database searches, workshops on business data resources, and job banks. Suggestions and case studies are offered by the American Library Association (1990a, 1990b), Fiscella (1987), McClure, Boissy, Bishop, and Rengal (1987), McGinn (1987), and Molholt (1988).

Education in Information Skills

A second strategy for improving productivity responds to the sharply increased need for improved education as the U.S. economy becomes more dependent on information and information technologies. A growing proportion of Americans are illiterate, and those who are literate--even college graduates--may still lack the skills necessary to access and use information. Beyond basic reading skills and subject knowledge, it is information skills that can boost individual productivity: that can better equip employees to adapt to new information sources and formats and better enable them to apply information in making decisions.

The task of imparting these skills falls to library and information professionals who, working with teachers, can help build information skills into subject-area curricula for students of all ages. They can also help improve the productivity of education in their own field by training more library media specialists and information resource managers, and by conducting relevant interdisciplinary research. They need to use information technologies to teach information technologies, and redefine jobs and responsibilities. In short, they must follow the lead of industry in adapting to the changing market. The American Library Association (1990a, 1990b), Bearman (1984), Brown (1986), and Kelly (1990) all describe approaches to information skills education.

Conclusion

The three themes of the 1991 White House Conference on Library and Information Services are clearly intertwined. All three themes point to fundamental questions about the roles, values, costs, and impacts of information. According to the American Library Association (1990b):

> Now knowledge--not minerals or agricultural products or manufactured goods--is the country's most precious commodity, and people who are information literate--who know how to acquire knowledge and use it--are America's most valuable resource.

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